Capability Gap Brief

Target Acquisition

The <u>detection</u>, <u>identification</u> and <u>location</u> of a target in sufficient detail to permit the effective employment of weapons

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FMID Capability Gaps

FMID Section	Priority
Unmanned Aircraft Systems	1
Assault Support	2
Target Acquisition	3
Counter fire / Targeting	4
Fire Support Coordination	5
Information Operations	6
Personal Equipment	7
Small Arms / Crew-Served	8
Mobility / Counter-Mobility	9
Rockets / Artillery	10
Riverine / Special Operations	11
Public Affairs	12
Offensive Air Support	13
Electronic Warfare	14
Civil Affairs	15
Offensive Anti-Air Warfare	16

Capability Analyzed
Target Acquisition

15 JCA's supported: Hi Pri-Provide and Employ Joint Fires
23 MCT's supported : Hi Pri-Assess/Conduct combat assessment

Deficiencies in Conditions: Unable to provide adequate target data for fire support planning.
Deficiencies in Standards: Emerging gap to provide targeting data in digital format.

Inputs utilized for analysis:

- MAGTF FAA dtd Jun 2006
- GRWLR CDD 27 Apr 05
- DC, PP&O GCE Advocate's Capability List.
- Marine Corps Midrange Threat Estimate: 2005-2015
- Tgt Acquisition Platoon UNS Jan 2006
- Current Funding Data: POM-08 and Supplemental
- STOM and DO Concepts, Grey Book

Gap, Excess, or Shortfall

D	**MAGTF Targeting Process. TAP Concept. Sensor correlation procedures.**
O	**TAP Concept. Integration of sensors into RCT. Lack of standardized targeting organization at the CE of the MAGTF.**
T	**No specific training on D3A process. GCFS/LCMR formal training.**
M	**GWLR continued funding required. Targeting software solution. Increase in Q-46s with MC end strength increases. Funds GCFS and LCMR (transition to POR). UAS OSRVT. Sensor Correlation Engine.**
P	**Target Effects Officer at RCTs.**

Current PORS:

- Ground Weapons Locating Radar (GWLR)_– Increment II of G/ATOR. An expeditionary radar system that will acquire threat ID fire systems at greater ranges than the current Q-46A.
- Q-46 Firefinder Radar – GCE's organic indirect fire detection asset.
- Ground Counter Fire Sensor (GCFS) - Acoustic ID Fire detection Asset .
- C4 systems: AFATDS, WEEMC, JADOCS, CAC2S

Identification / Impact of the Capability Gap

- **Marine Corps Tasks identified within the target acquisition capability area as gaps or shortfalls**

Marine Corps Task Capability Description	MCT #
ASSESS/Conduct Combat Assessment	3.1.6
Conduct Offensive Ops	1.6.1
DECIDE/Conduct Target Development, Validation, Nomination, &Prioritization	3.1.2
Conduct Targeting (using 3DA in concert with JTC)	3.1
Attack Targets	3.2
Conduct Indirect Fires	3.2.4.2
Conduct CAS	3.2.3.1.1
Conduct Direct Fires	3.2.4.1

Identification / Impact of the Capability Gap

MCT 3 EMPLOY FIREPOWER

CONDUCT TARGETING (D3A/JOINT TARGETING CYCLE) MCT 3.1

MCT 3.1.1
DECIDE/Determine Commander's Objectives, Guidance, and Intent

MCT 3.1.1.1
Conduct Effects-Based Targeting

MCT 3.1.1.1.1
Determine Desired Direct Effects

MCT 3.1.1.1.2
Determine Desired Indirect Effects

MCT 3.1.1.2
Develop Measures of Effectiveness (MOEs)

MCT 3.1.2
DECIDE/Conduct Target Development, Validation, Nomination, and Prioritization

MCT 3.1.2.1
Identify Planned Targets

MCT 3.1.2.1.1
Identify Scheduled Targets

MCT 3.1.2.1.2
Identify On-Call Targets

MCT 3.1.2.2
Respond to Immediate Targets

MCT 3.1.2.2.1
Respond to Unplanned Immediate Targets

MCT 3.1.2.2.2
Respond to Unanticipated Immediate Targets

MCT 3.1.2.3
Conduct Target Value Analysis (TVA)

MCT 3.1.2.3.2
Identify High-Payoff Targets (HPT)

MCT 3.1.2.3.2.1
Develop a High-Payoff Target List (HPTL)

MCT 3.1.2.3.3
Nominate Time-Sensitive Targets (TST) to the Combatant Commander or Joint Force Commander

MCT 3.1.2.4
Nominate Targets for Submission to the Joint Integrated Prioritized Target List (JIPTL)

MCTL 3.1.2.5
Lead or Participate in a Target Board

MCT 3.1.3
DECIDE-DETECT/Conduct Capabilities Analysis

MCT 3.1.3.1
Conduct Weaponeering

MCT 3.1.3.2
Identify Target Acquisition (TA) Taskings

MCTL 3.1.3.3
Develop an Attack Guidance Matrix (AGM)

MCT 3.1.3.4
Identify Target Selection Standards

MCT 3.1.3.5
Identify Requirements for Battle Damage Assessment (BDA)

MCT 3.1.4
DETECT-DELIVER/Obtain the Commander's Decision and Force Assignment

MCT 3.1.4.1
Identify Force Apportionment

MCT 3.1.4.2
Identify Force Allocation

MCT 3.1.4.3
Conduct Air Tasking Order (ATO) or Joint ATO Development Activities

MCT 3.1.4.4
Develop Fires Portion of the Operations Order (OPLAN/CONPLAN)

MCT 3.1.5
DELIVER/Conduct Mission Planning and Force Execution

MCT 3.1.5.1
Execute Attack Guidance on Targets in Support of the Commander's Plan

MCT 3.1.6
ASSESS/Conduct Combat Assessment

MCT 3.1.6.1
Assess Battle Damage Assessment (BDA)

MCT 3.1.6.1.1
Assess the Physical Damage to Targets

MCT 3.1.6.1.2
Assess the Functional Damage to Targets

MCT 3.1.6.1.3
Assist Theater and National Level Intelligence Agencies with Assessment of the "Target System"

MCT 3.1.6.2
Conduct Munitions Effects Assessment

MCT 3.1.6.3

ATTACK TARGETS MCT 3.2

MCT 3.2.1
Conduct Fire Support Tasks

MCT 3.2.1.1
Support Forces in Contact

MCT 3.2.1.2
Support the Commander's Concept of Operations

MCT 3.2.1.3
Integrate Fire Support with the Scheme of Maneuver

MCT 3.2.1.4
Sustain Fire S

MCT 3.2.2
Achieve Targe Objectives

MCT 3.2.2.1
Conduct Fires an Enemy For

MCT 3.2.2.2
Conduct Fires Enemy Force

MCT 3.2.2.3
Conduct Fires Enemy Force

MCT 3.2.2.4
Conduct Fires an Enemy For

MCT 3.2.2.5
Conduct Fires Enemy Force

MCT 3.2.3
Conduct Aviat Fires

MCT 3.2.3.1
Conduct Offe Support (OAS)

MCT 3.2.3.1.1
Conduct Close Air Support (CAS)

MCT 3.2.3.1.2
Conduct Deep Air Support (DAS)

MCT 3.2.3.1.2.1
Conduct Air Interdiction Operations

MCT 3.2.3.1.2.2

MCT 3.2.5
Control Supporting Arms

MCT 3.2.5.1
Control Ground Surface Fires

MCT 3.2.5.2
Control Close Air Support

MCT 3.2.5.3
Control Naval Surface Fire Support (NSFS)

es

5 MOS-Targeting Billets in the Marine Corps Identified and trained to conduct D3A and which is critical to the entire Employ Fire Power Task

Identification / Impact of the Capability Gap

- **Advocates Capability List**
  - **Ground indirect fires forces capable of providing a triad of complementary, discriminating and non-discriminating fires that facilitate combat operations during both traditional and irregular operations.**
  - **The ability of the MAGTF to provide discriminating / precision indirect fires that enhance combat operations during both traditional and irregular operations.**
  - **Modern artillery forces capable of providing fires in support of MAGTF operations.**
  - **Accurate location of targets of opportunity facilitating rapid attack and reactive counterfires.**
  - **The ability of the MAGTF to identify friendly, enemy, and neutral forces and reduce incidences of fratricide and improve combat effectiveness / situational awareness**

Identification / Impact of the Capability Gap

- **Advocates Capability List**
  - **Expanded fire support organization providing technical and tactical expertise for planning and executing Joint and Marine fires, including air fires, at all tactical levels within the GCE from the squad through the division.**
  - **GCE possesses the ability plan for, execute and integrate numerous lines of operation aimed at undermining the enemy and positively influencing the civilian populace toward Marine tactical and operational objectives.**
  - **The GCE possesses the ability to deliver non-lethal fires in support of tactical operations.**

Identification / Impact of the Capability Gap

- **The MAGTF lacks trained personnel required to focus long range and persistent target acquisition assets using the D3A targeting methodology**
  - **Targeting products are not developed or do not support commanders intent**
- **Maneuver elements lack the expertise to employ target acquisition assets or perform D3A planning critical to the employment of target acquisition assets**
  - **Target Acquisition assets are employed improperly**
  - **ISR plan is not in synch with fires**
- **Current indirect fire detection systems cannot provide 360 degree, all-weather, covert coverage**

Identification / Impact of the Capability Gap

- **The effective range of current IDF detection assets does not provide the depth needed to support current or future operations**
  - **IDF detection capability for mortars is 12-14K**
- **MAGTF lacks persistent flexible target acquisition platforms (Direct observation, UAS type assets)**
  - **Commanders lack pro-active target acquisition platforms**
- **MAGTF does not have an automated target correlation capability**
  - **Target location and verification is done manually**
  - **Target lists are managed by hand or not done at all**
  - **Targets must be manually verified against the RSTL/NSTL**

Identification / Impact of Gap on Distributed Operations

- Digital information feeds need to be developed or enhanced to support technology and expedite the targeting process for DO
- The MAGTF lacks the quantity and Type of target acquisition assets required to support DO
  - Unable to support multiple distributed units with current counterfire coverage and doctrine
- Maneuver units lack the expertise to focus limited target acquisition assets to support DO
  - DO requires strict adherence to targeting methodology to support the commanders intent
- The MAGTF lacks the communications capability to share target acquisition information in DO environment
  - DO requires communications capability over widely dispersed units for real time acquisition correlation and shared targeting situational awareness

Key Attributes Needed to Resolve the Gap

- **Increase the capability of Target Acquisition Assets (Systems Capacity vs Capability)**
- **UAS's must be increased and effective information links established**
- **Develop and enhance the capability of systems to transmit targeting information**
- **Develop an automated target management tool for the tactical user (BN to MEF)**
- **360 degree overlapping radar coverage**
- **Develop long range radar capability**
- **Place Target Acquisitions SME's in key billets**
- **Institutionalize targeting methodology**
- **Conduct effective Target Acquisition training**
- **Develop sound doctrinal targeting publications**

Capability Gap Issues

- **This capability gaps are not new and are becoming increasing larger and more pronounced by current operations, recent equipment acquisitions and future operating concepts. Several UNS have been submitted highlighting the gaps within the Marine Corps**
  - **0803 Target Information Officer**
  - **LCMR/GCFS UNS**
  - **AN/TPQ-46 Enhancement programs**
  - **MAGTF Targeting Process**

- **Capability gap is also associated with the capability areas of Counterfire/ Targeting and fire support coordination**
  - **Solutions are also mutually supporting**

Capability Gap Issues

- **Army initiatives to mitigate capability gaps associated with Target Acquisition**
  - **Increased MOS 131ATargeting Warrant Officer (USMC 0803) from 147 to 352**
  - **Establishment of an Indirect Fire Task Force**
  - **Procured a short range 360 degree lightweight radar**
    - **LCMR**
  - **Researched and developed an acoustic radar system**
    - **UTAMS**
  - **Developing a new counter battery radar**
    - **(EQ-36)**
  - **Fielded a Counter Rocket Artillery Mortar Program (CRAM)**

Division Integration Concerns

- **Intelligence Integration Division**
  - **# 1 Capability Shortfall = Sensor to Shooter link**
  - **# 3 Capability Shortfall = Lack of ISR/Data Management**

Gap #	JCA	MCTL	Description of Capability Gap by Task	G/E/ S/N
1	4.5.2 [illegible] Development 7.0.0.0 Joint Protection 9.3.0.0 Conduct Decisive Maneuver 14.0.0.0 Joint Special Operations and Irregular Warfare 14.2.0.0 Direct Action 14.4.0.0 Unconventional Warfare	2.1 Plan and direct Intelligence Operations 2.1.1.5 Support targeting	Limited ability to rapidly disseminate actionable intelligence and relevant products, to include sensor to shooter Near Real Time (NRT) data to the lower tactical levels (BN and below).	S
2	4.2.0.0 Observation and Collection (All Domains)	2.2 Collect data and intelligence	Limited ability to establish and maintain a persistent, multi-sensor collection architecture to enable a covert, "unblinking eye" view within a defined battlespace.	S
3	5.3.1.0 Access and Share Intelligence Information and Forecasts	2.1 Plan and direct intelligence operations 2.4 Produce Intelligence	Limited ISR data visibility and accessibility and database synchronization between USMC units/ organizations, other Services, Theater elements, coalition partners and government/non-government organizations external to the DoD.	S
4	14.4.0.0 Unconventional Warfare	2.2 Collect data and intelligence	Limited ability to collect on rapidly changing threat signals of interest – refer to the following Joint Worldwide Intelligence Communication System (JWICS) http://www.itsfac.mcia.ic.gov/MCISR-E	S

Integration Concerns

- **Command and Control Integration Division**
  - **# 1 Capability Shortfall = Transmitting accurate terrestrial information**

Gap #	JCA	MCTL	Description of Capability Gap by Task	G/E/ S/N
1	5.3.0.0 Develop and Maintain Shared Situational Awareness and Understanding	5.1 Acquire, Process, Communicate information and maintain status 5.1.3.2 Provide Positive ID of Friendly Forces in the AO	Technological solution needed to build hybrid terrestrial/celestial networks which combine the low data latency aspects of terrestrial networks with the BLoS capability of celestial networks, in order to maintain complete, accurate blue force picture.	S
2	Provide Robust, reliable communications to all nodes, based on the varying requirements of those nodes (FORCEnet 1)	5.1.1 Provide and Maintain Communications	Gap in the ability to operate voice and data C2 systems to the squad level	G
3	5.6.0.0 Synchronize Execution Across all domains	5.3.1 Direct Operations 5.3.2 Establish Means of command and Control	Gap in the ability to define and display operational picture with minimum latency, incorporate air and ground tracks, do so on-the move and over-the-horizon from any platform	G
4	Provide Robust, reliable communications to all nodes, based on the varying requirements of those nodes (FORCEnet 1)	5.1.1 Provide and Maintain Communications	Gap in the ability to operate C4I systems on-the-move and over-the-horizon	G
5	5.3.0.0 Develop and Maintain Shared Situational Awareness and Understanding	5.1 Acquire, Process, Communicate information and maintain status 5.1.3.2 Provide Positive ID of Friendly Forces in the AO	Shortfall: Inability to fully share Blue Force Tracking information between Army and Marine Corps units due to differences in communications architectures, data management strategies and network security classification.	S

Doctrine/OTLPFM Analysis

- **Doctrine**
  - **Joint Publications**
    - **JP 3-60 Joint Doctrine for Targeting, 17 Jan 2002 (Under Revision)**
    - **JP 2.01.1 Joint Tactics Techniques and Procedures for Intelligence to Support Targeting, 9 Jan 2003**
  - **Marine Corps Publications**
    - **MCRP 3-16A Tactics, Techniques and Procedures for the Targeting Process, 8 May 1996**
      - **Dual service designated publication**
    - **MCRP 3-16D Multi-Service, Tactics, Techniques and Procedures for Time Sensitive Targets, Apr 2004**
      - **Dual service designated publication**

Doctrine/OTLPFM Analysis

- **MCRP 3-16.1A Tactics, Techniques and Procedures for the Field Artillery Target Acquisition, May 2002**
  - **Dual service designated publication**

- **Doctrinal Mitigating Solutions and Impacts**
  - **Develop a Marine Corps doctrinal publications that provides a baseline for MAGTF Target Acquisition**
  - **Develop a Marine Corps doctrinal publications that provides a baseline detailing digital targeting, target acquisition and counterfire processes (Similar to the old FM 6-18-1 MCFSS TTP)**
  - **Review and update MCRP 3-16.1A**

D/Organization/TLPFM Analysis

- **Organization**
  - **Current targeting structure does not support the D3A targeting process which is key to the effective employment of target acquisition assets**

- **Organizational Mitigating Solutions**
  - **Target Acquisition Platoon (TAP) UNS CDTS # 06025UA**
    - **Re-organizes the Operations Platoon in the Artillery Regiment Headquarters into a Target Acquisition Platoon**
    - **Consolidates Target Acquisition assets**
    - **Supports future concepts**
    - **Provides a scaleable trained capability that supports Distributed Operations and future concepts**
    - **SINGLE MOST COST EFFECTIVE SOLUTION**

DO/Training/LPFM Analysis

- **Training**
  - **Training is available or currently being developed that supports target acquisition**
    - **Identify appropriate schools and students**
- **Training requirements for new equipment**
  - **Formal training for new equipment is being incorporated in existing curriculums (1st Qtr FY08)**
- **Training locations**
  - **Marine Detachment Ft Sill Ok**
    - **Evaluate impacts of increasing/changing courses (Ongoing)**
    - **Evaluate impacts of student increases (Ongoing)**
  - **Dam Neck VA**
    - **Evaluate impact of increase students**

DO/Training/LPFM Analysis

- **Training mitigating solutions and impacts**
  - **Develop training that supports a target acquisition MOS**
    - **Curriculum is currently being developed**
    - **Target Acquisition Platoon UNS (CDTS # 06025UA)**
  - **Develop training that supports recent acquisition assets**
    - **Curriculum is currently being developed**
  - **Focused specific career progression schools for 0803's**
    - **WOBC, Joint Targeting School, WOAC etc**
  - **Identify targeting as a secondary MOS for specific billets**
    - **Develop training plan for MOS**
    - **Requires emphasis from leadership**
  - **May impact facilities and instructors**
    - **Evaluate impact of increase students**

DOT/Leadership/PFM Analysis

- **Leadership and Education**
  - **Target acquisition leadership and experience is needed in infantry units (0803 UUNS CDTS # 06285UA)**
  - **Organization leadership will be required to mitigate gaps in CSS units**
- **Leadership Solutions**
  - **CO's & OPSO's need to recognize the value of D3A and targeting processing from target acquisition to target attack and assessment**
  - **Place 0803 Target Information Officers in each regiment (0803 UUNS CDTS # 06285UA)**
    - **Ensures the correct employment of target acquisition assets**
    - **Provides the expertise to develop targeting products to support target acquisition**
    - **Ensure the D3A targeting process is completed and supports the commanders intent**

DOTL/Personnel/FM Analysis

- **Personnel**
  - **There are not enough targeting trained personnel below the division level in the Ground Combat Element**
    - **Infantry units have little to no experience in D3A or developing the products required to focus target acquisition assets.**
    - **Infantry units have no experience in the employment of target acquisition assets**
    - **Personnel designated to perform target acquisition activities are not structured or focused to support target acquisition assets**
  - **Combat Service Support**
    - **No specific targeting billets or duties identified to support targeting process which support employment of target acquisition assets**
  - **Air support Element**
    - **Have dedicated billets identified to perform targeting functions**

DOTL/Personnel/FM Analysis

- **Personnel Solutions**
  - **Put an 0803 Target Information Officer in maneuver elements; regiment, MEU, MEF (0803 UUNS CDTS # 06285UA)**
    - **Critical for the employment of target acquisition assets to support distributed operations and support future concepts**
  - **Create the Sensor Support Crewman MOS (Target Acquisition Platoon UNS CDTS # 06025UA)**
    - **Re-designates the descriptive title of the 0847 MOS**
      - **Provides a Marine capable of emplacing and supporting target acquisition assets**
      - **No increase in personnel**
  - **Identify and designate billets appropriate for additional duties of targeting in CSS units**
    - **Provides CSS targeting knowledge to support target acquisition assets and ensure the targeting process supports they support areas**

DOTLP/Facilities/M Analysis

- **Facilities**
  - **An increase in quantity or quality of facilities will have no effect on the capability gap.**
    - **Training requirements could create a need for increased classrooms.**
    - **The acquisition of equipment or increase in existing systems may require an increase in store space**

DOTLPF/Materiel Analysis

- **Marine Corps Materiel**
  - **AN/TPQ 46A Firefinder Radar (202k + 15 systems)**
    - **Requires continued funding and RDT&E**
    - **Must develop system, processes and supporting systems to increase capability IOT support future concepts**
    - **Will remain the primary IDF detection asset until G/ATOR FOC (2018)**
  - **AN/TMQ-48 Lightweight Counter Mortar Radar (LCMR) (202k + 15 systems)**
    - **Procure in spring 07**
    - **Requires structure to support (Target Acquisition Platoon UNS CDTS # 06025UA)**
  - **Ground Counter Fire Sensor (GCFS)**
    - **No funding past FY07**
    - **Requires structure to support as a fielded system (Target Acquisition Platoon UNS CDTS # 06025UA**
  - **G/ATOR Inc II**
    - **Critical to future of Target acquisition**
    - **FOC planned for 2018**

DOTLPF/Materiel Analysis

- **Marine Corps Materiel (cont)**
  - **Meteorological Measuring Set (MMS)**
    - **Provides critical meteorological information to support IDF detection and counterfire assets**
    - **SYSTEM HAS NO FUNDING AFTER FY09**
    - **Modeled Meteorological information can fill capability gap**
      - **<u>Must Fund a capability in FY10</u>**
  - **GBOSS/CRAM**
    - **MCWL initiative**
    - **Requires study for integration in future systems**
    - **Target Acquisition Platoon (UNS CDTS # 06025UA) supports the concept**

DOTLPF/Materiel Analysis

- **Possible Existing Marine Corps Materiel Solutions**
  - **AN/TPQ-46, 202k = An increase in 15 systems**
  - **LCMR**
    - **Increase AAO to support Distributed Operations and future Concepts?**
  - **Refine digital target acquisition capabilities for the GCFS and the LCMR**
  - **Refine target correlation capabilities to support target acquisition assets**
  - **As the primary target detection assets of the GCE it is critical that the current capabilities of the AN/TPQ-46 be enhanced**
  - **The G/ATOR II must be developed on schedule to replace the AN/TPQ-46**
  - **Exploit GBOSS/CRAM success on existing and future systems**
  - **A suitable meteorological information capability must be fielded in FY10 IOT to support Target acquisition assets as well as provide the information needed to compute accurate artillery firing data.**

DOTLPF/Materiel Analysis

- **Other Service Materiel programs**
  - **Unattended Transient Acoustic MASINT Sensor (UTAMS), USA**
    - **Limited success**
  - **Counter Rocket Artillery Mortar (CRAM), USA**
    - **Correlation Capability**
  - **Joint Automated Deep Operations Coordination System (JADOCS), USA**
    - **Operational Targeting Software Solution**
- **Possible Other Service Materiel Solutions**
  - **Monitor evolution of UTAMS and CRAM for capabilities that can be easily adapted for use by existing target acquisition assets**
  - **Evaluate JADOCS for use as a tactical targeting tool**
    - **Currently JADOCS is not a viable solution for use below the MEF level**

Existing Materiel Funding Recommendation

- **Funding Recommendation in order of priority for Unfunded systems**
  - **AN/TPQ-46A Firefinder Radar Upgrades**
    - **Includes the LCMR as an SL-3 item**
  - **Meteorological Measuring Set Replacement**
    - **Transition to modeled information will result in a long term cost savings**
  - **Ground Counter Fire Sensor**
    - **Was identified as a top 10 priority by the MROC for items unfunded in FY08**
- **Capability gaps mitigated**
  - **MCT 1.6.1 Conduct Offensive Operations**
  - **MCT 3.2 Attack Targets**
  - **MCT 3.2.4.2 Conduct Indirect Fires**
  - **MCT 3.2.3.1.1 Conduct CAS**
  - **MCT 3.2.4.1 Conduct Direct Fires**

Materiel/Non-Materiel Recommendation

- **Issue a Solution Planning Directive (SPD) to develop a DOTMLP Change Request for Target Acquisition, Counterfire and Targeting (TACT) Family of Systems (FoS)**
  - **Target Acquisition Platoon**
    - **Table of Organization and Equipment Change Request**
    - **Restructure Operations Platoon within the headquarters battery at each artillery regiment**
    - **Change MOS description and title of the 0847 MOS**
  - **LCMR**
  - **GCFS**
  - **Tactical Targeting Software Suite**
  - **Modeled Meteorological information Manager**
  - **Target Acquisition correlation engine**
  - **Improvements and upgrades for the AN/TPQ-46 radar**
  - **Meteorological requirements**
  - **Marine Artillery Survey Set**
  - **Geodetic Information center**

Materiel/Non-Materiel Recommendation

- **Increase the total number of active duty 0803's, placing one in each active duty infantry regiment.**
  - **UUNS CDTS # 06285UA**
  - **TOECR submitted April 2004**
  - **Ground Combat Branch, Plans, Policies and Operations concurs with TOECR March 2005**
  - **Requirement validated by Deputy Commandant for Combat Development April 2005**
  - **0803 UUNS submitted September of 2006**
    - **CDIB tasks F&MID to validate in FSA**
- **The FSA conducted validates that putting 0803's in the infantry regiments will significantly mitigate capability gaps related to target acquisition, counterfire and targeting**

Materiel/Non-Materiel Recommendation

- **Capability gaps mitigated**
  - **MCT 1.6.1 Conduct Offensive Operations**
  - **MCT 3.1 Conduct Targeting (Using D3A in concert with JTS)**
  - **MCT 3.1.2 Decide, Conduct Target Development, Validation, Prioritization and nomination**
  - **MCT 3.1.6 Assess/ Conduct Combat Assessment**
  - **MCT 3.2 Attack Targets**
  - **MCT 3.2.4.2 Conduct Indirect Fires**
  - **MCT 3.2.3.1.1 Conduct CAS**
  - **MCT 3.2.4.1 Conduct Direct Fires**

Doctrinal Recommendation

- **DCR determines recommendations for Publication Development Order (PDO)'s that mitigate gaps and shortfalls**
  - **MAGTF target acquisition publication**
    - **Develop a replacement for the MCRP 3-16.1A Tactics, Techniques and Procedures for the Field Artillery Target Acquisition, May 2002**
  - **MAGTF targeting process publication**
    - **Validates decision of the Capabilities Development Board from May of 2004 in response to the MAGTF Targeting Process UNS CDTS # 04132UA, recommendation was that TECOM draft a consolidated targeting publication**
- **Capability gaps mitigated**
  - **MCT 3.1 Conduct Targeting (Using D3A in concert with JTS)**
  - **MCT 3.1.2 Decide/ Conduct Target Development, Validation, Prioritization and nomination**
  - **MCT 3.1.6 Asses/ Conduct Combat Assessment**
  - **MCT 3.2.1 Conduct Fire Support Tasks**

Results/Expectations of Recommendations

- **TACT DCR (Draft complete NLT 1 Oct 07)**
  - **Validate TAP Concept**
  - **Determines the billets to be filled by 0803's to mitigate gap across the MAGTF**
    - **0803's at the infantry regiment has already been validated and billets need to be established ASAP.**
  - **Provide the basis for the recommended doctrinal solutions**
  - **Determine and validate the requirements of a tactical targeting software solution**
  - **Identify and update requirements for meteorological and survey support in the MAGTF**
  - **Identify other material and non-material solutions to mitigate the identified gaps**

TAMCN: (A1440) AN/TPQ-46A FireFinder Radar

Current AAO	Additional RQMT	Proposed AAO	O/H	UND	Short of RQMT	08 RQMT
28	**0**	**28**	**22**	**5**	1	1

$ Unit Cost	$ Total AAO Shortfall	$ FY-08 Requirement
$6,500,000	$6,500,000	$6,500,000

The AN/TPQ-46A is the Ground Combat Elements primary organic indirect fire detection asset and is the critical counter-fire system. The system detects mortars, artillery and rockets at a range of .75 to 24km. The system is also a key part of the Counter Rocket Artillery Mortar sense and warn system which significantly enhances force protection for deployed forces. The system will receive an upgraded processor in FY08 which will enhance the capability. Target processing capabilities are being examined for enhancement

AAO	
MARFORPAC	**10**
MARFORCOM	**5**
MARFORRES	**5**
DMFA	**2**
WRMR	**6**
TOTAL	**28**

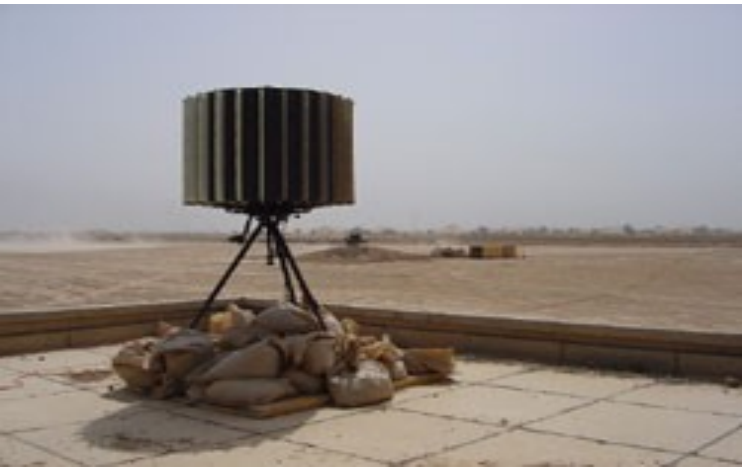
Additional Rqmt	
DO	**0**
MARSOC	**0**
DO Enabling	**0**
Mojave Viper	**0**
Other	**0**
TOTAL	**0**

- Must continue to seek enhancements until replaced by the GWLR (2015)
- 202k plan will increase AAO by 15 systems
- TAP will enhance target processing capability of system
- Target Software Suite will include correlation engine which will enhance target processing
- Primary IDF detection assets in the Marine Corps
- Need to explore possible antenna and power upgrades

TAMCN: (*AXXX*) *AN/TPQ-48 Light-weight Counter Mortar Radar*

Current AAO	Additional RQMT	Proposed AAO	O/H	UND	Short of RQMT	08 RQMT
30	**0**	**30**	**0**			

$ Unit Cost	$ Total AAO Shortfall	$ FY-08 O&MMC Requirement
$325,000	N/A	



The AN/TPQ-48 Light-weight Counter Mortar Radar (LCMR) is a 360 degree ground weapons locating radar designed to augment the Ground Combat Elements organic indirect fire detection assets. The system detects enemy IDF(primarily mortars) at a range of .5 to 5 km and is an SL-3 component of the AN/TPQ-46 system and currently integrated into the Counter Rocket Artillery Mortar sense and warn system significantly contributing to force protection for bases and personnel in Iraq. The system is critical to FOB protection. Failure of the system could result in significant gaps in force protection and potential loss of life.

AAO	
OPFORRES	**22**
SPT EST	**2**
MPF/NALMEB	**0**
DMFA	**0**
WRMR	**6**
TOTAL	**30**

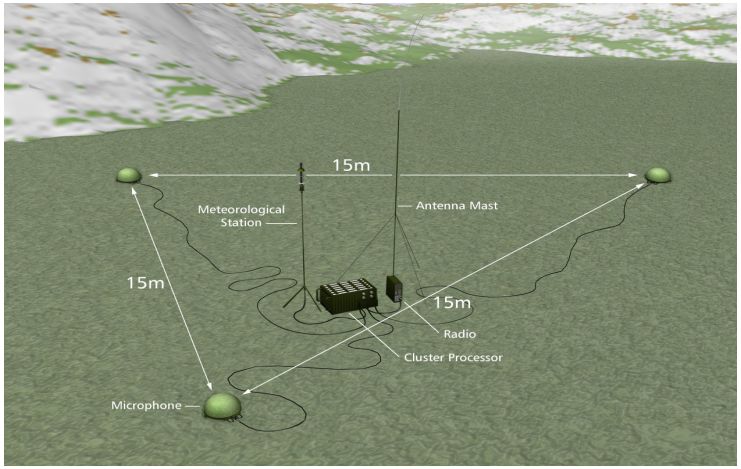
Additional Rqmt	
DO	**0**
MARSOC	**0**
DO Enabling	**0**
Mojave Viper	**0**
Other	**0**
TOTAL	**0**

- **System are scheduled to be purchased in March of 2007**
- **System will be SL-3 to the AN/TPQ-46, (1) per**
- **Used in conjunction with the Q-46 the LCMR will allow the longer range radar to focus energy to provide better detection capabilities at further ranges**
- **Must develop digital sensor to shooter link**
- **The LCMR will feed a correlation engine will enhance the counterfire process**
- **The TAP will provide the concept of**

TAMCN: (*A0016) Ground Counter Fire Sensor*

Current AAO	Additional RQMT	Proposed AAO	O/H	UND	Short of RQMT	08 RQMT
10	**0**	**0**	**10**	**0**	0	10

$ Unit Cost	$ Total AAO Shortfall	$ FY-08 Requirement
$250,000	$0000	$2,500,000



The Ground Counter Fire Sensor is an acoustic system that provides 360 degree indirect fire detection capability to a range in excess of 20km. The system has also proven valuable in the detection of IED's and other insurgent activities. Current initiatives will incorporate the sensor into the Counter Rocket Artillery Mortar (CRAM) program's sense and warn capability significantly enhancing force protection. The Target Acquisition Platoon will provide the equipment and personnel required to support the system

AAO	
MARFORPAC	**3**
MARFORCOM	**2**
MARCENT	**4**
SPT ESTAB	**1**
WRMR	**0**
TOTAL	**10**

Additional Rqmt	
DO	**0**
MARSOC	**0**
DO Enabling	**0**
Mojave Viper	**0**
Other	**0**
TOTAL	**0**

- **Requires funding in FY10 and is currently being supported by supplemental funding**
- **Must develop digital sensor to shooter link**
- **TAP will provide the equipment and personnel to support the fielded system**
- **Provides 360, 24/7 covert coverage of acoustic events**
- **Will enhance target processing when included with a correlation engine**

TAMCN: (*AXXX*) *Ground/Air Task Oriented Radar*

Current AAO	Additional RQMT	Proposed AAO	O/H	UND	Short of RQMT	08 RQMT
0	**0**	**22**	**0**			

$ Unit Cost	$ Total AAO Shortfall	$ FY-08 O&MMC Requirement
UNK	N/A	

3D, HMMWV-mounted, short/medium range radar designed to detect low observable targets i.e., CMs, ABTs, rockets, mortars, artillery, etc.

Supports Air Defense, Air Surveillance, Air Traffic Control (ATC) & Counter-Battery/Target Acquisition

Provides real-time radar measurement data to Tactical Air Operations Center, Common Air Command and Control System , Composite Tracking Network/Cooperative Engagement Capability, & Advanced Field Artillery Tactical Data System

Satisfies warfighters' needs across the MAGTF: one system through tech insertion leveraged from prior variants

AAO	
OPFORRES	**20**
SPT EST	**2**
MPF/NALMEB	**0**
DMFA	**0**
WRMR	**6**
TOTAL	**22**

Additional Rqmt	
DO	**0**
MARSOC	**0**
DO Enabling	**0**
Mojave Viper	**0**
Other	**0**
TOTAL	**0**

- **Scheduled to begin replacing the Q-46 in FY12 (IOC) as a 1 for 1 replacement**
- **202k would increase the AAO by 15 systems**
- **Program is in contested source selection process**
- **Preparing for a milestone B decision summer of 2007**

TAMCN: (*E1035) Meteorological Measuring Set*

Current AAO	Additional RQMT	Proposed AAO	O/H	UND	Short of RQMT	08 RQMT
22	0	22	22	0	0	22

$ Unit Cost	$ Total AAO Shortfall	$ FY-08 O&MMC Requirement
520,000	N/A	

The Meteorological Group (MSG) contains the vehicles, communications assets, and meteorological equipment necessary to support both electronic and visual meteorological operations simultaneously. The electronic capability is supported by the Meteorological Measuring System (MMS), which is a non-radiating electronic, fully automated meteorological system. The visual capability is supported with the Electronic Mechanical Meteorological Theodolite Kit (EMMTK), which is a non-radiating, manual tracking and computation (via handheld computer) meteorological system.

AAO	
IMEF	5
IIMEF	5
IIIMEF	3
MARFORRES	5
DMFA	2
SPT EST	2
TOTAL	22

Additional Rqmt	
DO	
MARSOC	
DO Enabling	
Mojave Viper	
Other	
TOTAL	

- **No funding past FY09**
- **Required to provide support to target acquisition assets as well as firing units**
- **Can be replaced with modeled information that will support re-organization of assets in the TAP concept**
- **Funding must be established for a replacement system**
- **Replacing system with modeled information capability represents <u>significant</u> savings in the long term**

Point of Contact for Further Information

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